

Additional notes on *Maclurochloa montana* (Poaceae: Bambusoideae) in Thailand

C. Rattamanee¹, S. Sungkaew^{2,3,4} and Y. Paisooksantivatana¹

¹ Department of Horticulture, Faculty of Agriculture, Kasetsart University, Bangkok, Thailand

² Department of Forest Biology, Faculty of Forestry, Kasetsart University, Bangkok, Thailand

³ Center for Advanced Studies in Tropical Natural Resources, Kasetsart University,
Bangkok, Thailand

⁴ fforsws@ku.ac.th (corresponding author)

ABSTRACT. The bamboo genus, *Maclurochloa* K.M.Wong, hitherto known by a single species from Peninsular Malaysia, *M. montana* (Ridl.) K.M.Wong, is here recorded with certainty for Thailand. Additional details of morphology based on Thai specimens and illustrations are provided.

Keywords. Bamboos, *Maclurochloa*, Thailand

Introduction

Maclurochloa is a genus of bamboo (Poaceae: Bambusoideae: Bambusinae) first established by Wong (1993) and represented by a single species, *M. montana* (Ridl.) K.M.Wong. It is one of several climbing genera recently shown to be distinct from *Bambusa* Schreb. (Wong 1993, 1995, 2005; Goh et al. 2010). *Maclurochloa montana* was previously regarded as endemic to Peninsular Malaysia and recorded in the states of Penang, Kedah, Pahang and Selangor, in lower montane forest at 780–1350 m above sea level (Wong 1993, 1995; Ohrnberger 1999; Goh et al. 2010). It is easy to identify in the field by its leaning-clambering habit, relatively slender culms, and the presence of conspicuous white hairy bands above and below the culm nodes (Fig. 1).

A recent listing of Thai plant names (Forest Herbarium 2001) had mentioned the occurrence in Thailand of this bamboo by its scientific name, but without any specimens cited and without any certain localities indicated. In the Forest Herbarium (BKF), now under the management of the Department of National Parks, Wildlife and Plant Conservation, a single specimen consisting only of scanty flowering material and small leafy branches (C. Niyomdham et al. 2329), collected from Nakhon Si Thammarat, was located for study. This was not certainly identified, bearing only an annotation that uses the basionym, “*Bambusa* cf. *montana*”. During a bamboo expedition for the Flora of Thailand Project, specimens of this bamboo (fertile and with all key vegetative parts including culm leaf sheaths) were collected from the Khao Phanom Bencha National Park, Krabi province, in Southern (peninsular) Thailand. From this, it has been possible to identify *Maclurochloa montana* with certainty. This paper confirms the presence of *M. montana* in Thailand, extending the known distribution of this interesting bamboo further north on the Thai-Malay Peninsula.



Fig. 1. Recently documented Thai material of *Machurochloa montana*. A. Habit and habitat; B. Details of the culm node and branch complement. Note the characteristic band of white hair on both sides of the culm node.

Additional information based on the Thai material

A description of the species is given in Wong (1995). In addition to that, we can add the following details:

- (1) The culms are 1–3 cm in diameter, with relatively thin walls, 0.2–0.5 cm thick; with internodes 20–50 cm long.
- (2) The culm-sheath has a linear-lanceolate blade; fragile crescentic to lobe-like auricles 3–5 mm long and 1–2 mm wide, with pale brown bristles 0.5–1 cm long fringing the margins.
- (3) The leaf ligule is a short denticulate to sub-entire rim c. 0.5 mm high, fringed with a few stiff bristles c. 1–2 mm long, or glabrate.
- (4) The pseudospikelet prophylls are 2-keeled, c. 1 mm long by 2 mm wide, with ciliate keels; the empty glumes are 5–12-nerved; the rachilla internode between perfect florets is 1–1.5 mm long, whereas the rachilla internode between perfect floret and terminal vestigial floret is usually longer, 2–3 mm long; the lemmas are 10–13-nerved; the paleas are 3–5-nerved between keels and 2–3-nerved between each keel and margin; the terminal vestigial floret(s) is/are represented only by a lemma, as long as or slightly exceeding the more distal floret(s), or represented by a lemma and a much reduced palea; the 3 lodicules are 6–12-nerved, hyaline, ciliate on the margin; the anthers are 3.5–4.5 mm long, yellow, with acute to pointed tips; the caryopsis is 3–4 mm long, bottled-shaped and grooved on one side. (See Fig. 2.)



Fig. 2. Some details of the pseudospikelet and floret of *Maclurochloa montana*. A. Part of flowering branch, showing clusters of pseudospikelets. B. A single pseudospikelet, with prophyll attached basally. C. A dissected pseudospikelet (from left to right: a prophyll; 2 bracts subtending buds, each followed by its bud; 3 empty glumes; a portion of the rachilla; a perfect floret and 2 terminal vestigial florets (the uppermost one enfolded by the lower one)). D. 2 glumes (left and centre) and a lemma (right) with a reduced palea. E. Lodicule complement. F. Pistil with 3 stigmas (2 broken). G. A caryopsis. All from C. Rattamanee M234.

Material examined. THAILAND. **Southern (peninsular) Thailand:** Krabi, Khao Phanom Bencha National Park, fertile, 16 Jan 2010, *C. Rattamanee M234* (BK; BKF; SING; Herbarium of Faculty of Forestry, Kasetsart University); Nakhon Si Thammarat, Khao Luang, fertile, 25 Feb 1991, *C. Niyomdham et al. 2329* (BKF).

Distribution: Southern (peninsular) Thailand (Krabi and Nakhon Si Thammarat provinces) to Peninsular Malaysia.

Ecology: Disturbed open sites adjacent to lower montane forest, dominated by grasses mixed with *Melastoma* sp. at 1000–1200 m (*C. Rattamanee M234*) or montane forest 1500 m above sea level (*C. Niyomdham et al. 2329*).

Vernacular name: *Pai Lneai* (Thai).

Notes: The phylogenetic relationships among various Southeast Asian climbing bamboo genera, including *Machrochloa*, and the core Bambusinae genera *Bambusa*, *Dendrocalamus* Nees and *Gigantochloa* Kurz ('BDG complex'), were investigated by Goh et al. (2010). Their analyses show *Machrochloa* to be firmly embedded within the BDG complex, and the authors discussed the possibility of a reticulate origin for such taxa although they emphasised the need for more work to clearly demonstrate this.

ACKNOWLEDGEMENTS. This work was supported by the Commission on Higher Education, Ministry of Education, Thailand. We thank Dr K.M. Wong, Singapore Botanic Gardens, for assistance in verifying this bamboo species.

References

- Forest Herbarium, Royal Forest Department. (2001) *Thai Plant Names: Tem Smitinand (revised edition)*. Bangkok: Prachachon Ltd.
- Goh, W.L., Chandran, S., Lin, R.-S., Xia, N.-H. & Wong, K.M. (2010) Phylogenetic relationships among Southeast Asian climbing bamboos (Poaceae: Bambusoideae) and the *Bambusa* complex. *Biochem. Syst. Ecol.* 38: 764–773.
- Ohrenberger, D. (1999) *The Bamboos of the World: Annotated Nomenclature and Literature of the Species and the Higher and Lower Taxa*. Amsterdam: Elsevier Science B.V.
- Wong, K.M. (1993) Four new genera of bamboos (Gramineae: Bambusoideae) from Malaysia. *Kew Bull.* 48(3): 517–532.
- Wong, K.M. (1995) *The Bamboos of Peninsular Malaysia*. Malayan Forest Records No. 41. Kuala Lumpur: Forest Research Institute Malaysia.
- Wong, K.M. (2005) *Mullerochloa*, a new genus of bamboo (Poaceae: Bambusoideae) from north-east Australia and notes on the circumscription of *Bambusa*. *Blumea* 50: 425–441.